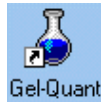


Gel-Quant Tutorial

The following tutorial is designed to guide you step-by-step through the procedures involved in using *Gel-Quant* software. *Gel-Quant* is easy to learn and this short tutorial will have you up and going in no time at all !

Step 1: Acquire a Gel Image in bitmap format

For convenience, you will find a number of different bitmap images supplied with your copy of *Gel-Quant*. This will allow you to experiment whilst learning how to use *Gel-Quant*.



Step 2: Start *Gel-Quant*

Start the *Gel-Quant* program by either selecting it from the program list or double clicking the icon (if you created one during installation).

Step 3: Load the Gel Image



Click on the File Menu and choose Open. Click on the file name to see a small preview of the selected image on the screen. Select an image to analyse and click Open.

Step 4: Find the Lanes



Lanes can be located either automatically or manually. For the purpose of this tutorial, click the Find Lanes icon to find the lanes automatically. Once found, the lanes are marked with coloured borders.

Step 5: Lane Straightening



The Lane Straightening function allows you to correct lanes which are not parallel. Often experimental lanes are not straight and parallel to each other. Click the Lane Straightening button to straighten the lanes. After straightening, some distortions remain – bands are not horizontal in some lanes and others have a “smile” effect.

NB: The Lane Straightening Tool subtracts inter-lane background intensities. The resulting image must be stored in the Save Status mode. It will not be available for further processing if stored using the simple Save Option.

Step 6: Removing “Smiles”

Use the deserpation function to remove inclination and smiles of all bands in particular lanes. This function does not influence the position of the band medians.

Step 7: Set Reper Lanes

Use the Set Reper Lanes button to set the standards lanes. Click the Set Reper Lanes button, then click the relevant lane on your gel image. An “R” marker will display at the top of the lane indicating that this lane has been set as a standards lane. Click the lane a second time to remove the “R” marker.

NB: The lanes marked as Reper Lanes must have identical sets of known standards.

Step 8: Line Up Standards Lanes

Use this tool to line up the Reper lanes which were set in Step 7. This function ensures that the known standards are identical for each standard lane.

Step 9: Setting Standards (Edit Lane button)

The molecular weights of standards must be matched with their positions in the corresponding bands. To do this, click the Edit Lane button which opens a separate Window.

This Window displays an image profile of a lane. To move along the profile, click the button on the Scroll Bar to move the red vertical line along the lane. Green brackets mark borders of the peaks and these can be moved if required by clicking and dragging.

The toolbar across the top of this screen allows you to change lane numbers, change the zoom, set a specific molecular weight and choose which standard to use, as well as adding or deleting peaks, setting molecular weights manually and fitting peaks with Gaussian curves.

When complete, click the X button to close this Window.

Step 10: Lane Profiles (Common Lane Diagram button)

The Common Lane Diagram button allows you to view profile images of particular lanes. Select the lanes you wish to view by clicking on them. Then click the Common Lane Diagram button. Profiles for each of the selected lanes display on the same graph. The colour of the lines reflects the colour of the marked lanes in the main gel image window.

Step 11: Metagel Presentation



With the main gel image displayed, click the Show Metagel button. The Metagel Presentation screen displays. The positions of the bands in the gel lanes corresponds to the placement of bars on the Metagel graph.

Step 12: Processed Data Table (Show Peaks Button)



Click the Show Peaks button to display the numeric data resulting from calculations on the processed gel.

The numbers in the table cells are molecular weight (MW) values of bands or their relative distances from the top of the image. Data are arranged in columns. To change details of column headings, click on the relevant Lane Number heading. Type the required heading in the dialogue box and click OK.

This tutorial has taken you through some of the basic skills in using *Gel-Quant*. It is by no means exhaustive. There are many more features in the program which have not been covered here.

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NOTE:

Gel-Quant software is for research purposes only and under no circumstances should be used for diagnostic or therapeutic procedures.